

ABSTRACT OF THE DISCLOSURE

The present invention is directed to an apparatus and method for measuring the weight of material such as rock, earth, wood, pulp, grain, gravel, sand, ore, cement etc. being processed or moved by an apparatus such as a conveyor, apron conveyor or bucket elevator driven by an electrical motor. The apparatus comprises a means for measuring the electrical energy consumed by the motor powering the apparatus during operation of the apparatus and a calibration formula for converting the power consumption of the motor to tonnage per hour of raw material processed by the apparatus. A continual record is kept of all "No-load" and "start-up load" time during the recording process and these figures are totalized along with tonnage for the recording period. In a preferred embodiment of the invention, the apparatus is provided with a temperature sensor to monitor the ambient temperature and apply a temperature calibration factor to adjust the output of the apparatus based upon the ambient temperature. In another embodiment of the invention, the apparatus is provided with a belt speed sensor to monitor the speed of the belt and adjust the output should stalling or slippage of the belt occur. A third embodiment of the invention, the apparatus is provided with a digital inclinometer to monitor change in angle of conveyor frame on a stacker conveyor and adjust the output in tonnage based on new angle of operation. The final embodiment of the invention, the use of No-load testing to re-calibrate the conversion formula by adjusting the formula by the difference in No-load reading compared to the No-load taken at the time of initial calibration of the apparatus.

